



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Takashi SHIBANUMA, et al.

Serial No.: 10/511,442

Art Unit: 1711

Filed: October 25, 2004

Examiner: JOHN M. COONEY

For: PROCESS FOR PRODUCING SYNTHETIC RESIN FOAM, BLOWING AGENT AND  
PREMIX

DECLARATION

Honorable Commissioner of Patents and Trademarks

Washington, D. C. 20231

SIR:

I, Takashi SHIBANUMA declare that:

- 1) I am one of the inventors of the above-identified application,  
and am familiar with the subject matter of said application  
as well as the disclosures in the cited references.
- 2) In order to demonstrate the advantage of the present invention,  
the following experiments were carried out under my direction  
and supervision.

Example 5

A blowing agent mixture composed of HFC-365mfc and  $c\text{-C}_4\text{F}_8$   
was added in a proportion of 44 parts to 100 parts of the system solution  
as used in Examples 2 and 3 to give Sample C (HFC-365mfc/  $c\text{-C}_4\text{F}_8$  ratio

of 6.7/1 by weight). A blowing agent mixture composed of HFC-365mfc and  $c\text{-C}_4\text{F}_8$  was added in a proportion of 54 parts and a glycol compound (diethylene glycol ethyl ether acetate) in a proportion of 23 parts were added to 100 parts of the system solution as used in Example 2 to give Sample D (HFC-365mfc/  $c\text{-C}_4\text{F}_8$  ratio of 6.7 by weight). With respect to Sample D, the weight of glycol compound was included in the weight of system solution. Therefore, the proportion of blowing agent mixture in Sample D was arranged to be identical to the proportion of blowing agent mixture in Sample C (blowing agent mixture/system solution). In other words, the ratio of blowing agent to polyol was identical in Samples C and D. One hundred grams of each sample was introduced into a 150 ml beaker, and the temperature was increased to 35°C to determine the amount of the HFC-365mfc/  $c\text{-C}_4\text{F}_8$  blowing agent mixture evaporated. In table 3, the proportion of amount of the HFC-365mfc/  $c\text{-C}_4\text{F}_8$  blowing agent mixture evaporated was calculated based on the initial amount of the blowing agent mixture. Table 3 shows the results.

Table 3

	30 min	60 min	120 min
Sample C	88.8%	81.0%	82.7%
Sample D	64.4%	69.7%	74.7%

Like example 4, when comparing Sample C containing no glycol compound with Sample D containing a glycol compound, the amount evaporated of sample D is clearly less than of Sample C. The results establish that the addition of a glycol compound has the effect of significantly reducing the evaporation of the blowing agent.

I, the undersigned, declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: \_\_\_\_\_

Takashi SHIBANUMA